

CRYSTALLINE FILTERS FOR ULTRAVIOLET SENSORS

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ABSTRACT

A crystal filter and a method of making a crystal filter capable of transmitting radiation within a particular pass band is disclosed. The crystal filter is particularly appropriate for a UV detection system, where the pass band is between about 200 to about 350 nm. A UV detection system incorporating the crystal filter is also described. One embodiment of crystal filter is formed from a single-crystal transparent host, such as a fluoride host, codoped with lanthanide or actinide fluorides and lanthanide or actinide nitrides, oxides, borides, carbides or hydroxides. Filter crystals according to the present invention can be grown by various crystal growth methods, including Czochralski and Bridgeman crystal growth methods.